

2015 USDOT TIGER GRANT APPLICATION

Granite Falls Bridge #102 Replacement Snohomish County, WA



Snohomish County

Public Works

3000 Rockefeller, M/S 607
Everett, WA 98201



**Snohomish County
Public Works**

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June 3, 2015

The Honorable Anthony Foxx
Secretary, U.S. Department of Transportation
1200 New Jersey Ave SE
Washington, DC 20590

Dear Secretary Foxx:

Snohomish County Department of Public Works respectfully submits our 2015 TIGER grant application for the Granite Falls Bridge #102 Bridge Replacement project.

The proposed project will replace the current bridge providing direct access to the Mountain Loop Scenic Byway and the Mount Baker-Snoqualmie National Forest. In addition to providing a multitude of recreational opportunities to our citizens, tourism for the City of Granite Falls, and residential access to the rural towns beyond Granite Falls, this bridge provides access for transport of natural resources including timber, sand, gravel and aggregate resources critical to the Puget Sound Region.

The current bridge was constructed in 1934 and has been rated structurally deficient, functionally obsolete and fracture critical. If this bridge were to fail, the detour route is 94 miles long with portions built only to minimal forest service standards and difficult to maintain during winter months. This detour would have impacts at both the local and Regional level.

Snohomish County will be the sole recipient of this grant, if awarded, but we have the support and partnership of multiple agencies including the Washington State Department of Transportation, Washington State Department of Fish and Wildlife and the Puget Sound Regional Council, to name a few. We respectfully submit this application for your consideration.

Sincerely,

Owen Carter, P.E.
Deputy Director/County Engineer

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A. PROJECT DESCRIPTION

Granite Fall Bridge #102 is located on Mountain Loop Highway in East Snohomish County, WA. This is a scenic road heavily used by thousands of visitors to the Mount Baker-Snoqualmie National Forest, truck drivers hauling thousands of tons of construction materials that support economic growth in the Greater Puget Sound area and by local Granite Falls adults and children making their way to work and school.



Granite Falls Bridge #102

Granite Falls Bridge #102 is of strategic importance to Snohomish County and the Puget Sound area because it is a direct connection between resource materials and a T-2 freight corridor that moves 4 to 10 million tons of construction materials per year. This bridge completes the “Last Mile” on State Routes 9 and 92 to the national freight system.

Should the bridge fail, or need to be closed for maintenance, the detour route is 94 miles on a route that is closed during the winter months and a portion of it is built to minimal forest service standards. The detour is approximately three hours long. This alternative route results in lost time, lost value, higher rate of diesel-related emissions and increased safety conflicts on the detour route.

Purpose and Need

Granite Fall Bridge #102 was first recommended for replacement in the 2012 Snohomish County Public Works Annual Bridge Report due to the following:

A. Current Transportation Challenge

The existing bridge is not wide enough for two trucks. Trucks need to wait on either end of the bridge to allow for a large vehicle to pass in the opposite direction. This is particularly problematic because the bridge is heavily used by trucks in the mining and timber industries. Construction materials are constantly being transported on the bridge from the local mines and timberlands to the Greater Puget Sound area. In 2014, there was an average of 1,200/day heavy trucks that crossed the bridge. Also, the bridge is a school bus route. The Granite Falls School District provides transportation for students on the Mountain Loop Highway year round. There are 203 students picked up in the morning and 236 in the afternoon with a total of 36 daily trips across the bridge. The bridge is only 20 feet wide from face-of-curb to face-of-curb. This narrow width makes it challenging even for two sedans to pass each other.

B. Bridge Strategic Value (Preventive Measure)

The condition of the existing bridge is not reliable in the long term. The bridge is eighty-one years old and coming close to the end of its useful life. The structure is a hinged steel truss which eliminates the possibility of widening the bridge. This type of bridge is no longer approved for construction. The existing structure is structurally deficient, functionally obsolete, and fracture critical (has a sufficiency rating of 41). With this in mind, we know it is only a matter of time before the existing structure can no longer support traffic. If the current bridge was to fail, the detour route is 94 miles on a route that is closed during the winter months and a portion of it is built to minimal forest service standards. The detour is approximately three hours long.

Granite Falls Bridge #102 provides a link between construction resources (sand, gravel, rock and timber) and the construction industry in the Greater Puget Sound Metropolitan area for both, public and private construction. For example, Granite Falls Bridge #102 provides an economic



Boeing's 1.3-million-square-foot 777X wing plant in Everett, WA (Puget Sound Business Journal)

connection between Green Mountain Mine (a local quarry) and the Boeing Company in Everett, WA. Green Mountain Mine, one of the quarries in the vicinity of the project footprint, is providing aggregate-rock, gravel and sand for contractors working on the 1.3 million square foot Boeing facility. Construction of Boeing's 777X wing

plant began last fall. The building is the largest single structure under construction in Washington State this year. At its peak, the construction will employ 1,200 people, and consume 31,000 tons of steel and 170,000 tons of concrete (See Section B for maps).

If not replaced, the poor condition of the Granite Falls Bridge #102 will threaten future transportation network efficiency, mobility of goods, accessibility and mobility of people, and economic growth. This project provides people with a reliable and safe connection to employment, higher education institutions and other essential services such as major hospitals.

Granite Falls Bridge #102 Replacement project also provides access to recreational parks. This bridge is on the Mountain Loop Highway, one of the main access routes to Mount Baker-Snoqualmie National Forest and the Boulder River Wilderness. Tourism is economic development. Visitors in Washington State spent \$19.5 billion in 2014; accounting for \$1.7 billion in tax revenues and created 163,450 jobs. Snohomish County visitors spent \$992 million; accounting for \$31.2 million in tax revenues and created 10,340 jobs. The Mountain Loop Highway is featured in many outdoor publications and focuses on the recreational opportunities

in the national forest such as hiking, fishing, snowshoeing, mountain climbing, and camping. Much of the County's outdoor recreational opportunities are in this area.

Mountain Loop Highway is an east-west alternate route to SR530. Mountain Loop Highway was used as a secondary detour route in March of 2014 after the SR530 Landslide (Presidential Disaster Declaration) to access the Town of Darrington via the Granite Falls Bridge #102.

Project Description

The project consists of replacing the existing Granite Falls Bridge #102 with a new bridge and removing the existing bridge. The proposed Granite Falls Bridge #102 Replacement project will fulfill its purpose and need by:

A. Transportation

The proposed bridge will be 30' wide face-of-curb to face-of-curb. The new structure will be wide enough for construction trucks and large vehicles to fit concurrently without having to wait on either end of the bridge. The bridge will also include 5 foot sidewalks on both sides (see Section G.1 for engineering details of existing and proposed bridges).

B. Bridge Strategic Value

The proposed bridge will be designed and built to current engineering design standards. The life expectancy of the new structure is 75 years. Hence, the bridge will become a reliable economic link between local construction material sources and the Greater Seattle Metropolitan Area for decades. The new Granite Falls Bridge #102 will improve long term efficiency, reliability and costs in the movement of workers and goods.

TIGER Grant funds will be applied towards the construction phase of the proposed Granite Falls Bridge #102 replacement and the removal of the existing bridge. This bridge is difficult to fund with grant funding sources, other than TIGER, because of the high construction cost estimate (\$20 Million). The amount being requested is 80% of the estimated construction cost or \$16 Million (see Section G2 for project costs and budget). The County is matching 20% of construction costs. Additionally, the project design is fully funded with County funds. MAP-21 eliminated the Highway Bridge Program as a stand-alone funding source for bridges. Instead, bridges located on the Interstate or the National Highway System are eligible for funding under the National Highway Performance Program. In Washington State, a local bridge advisory committee (BRAC) recommends projects for WSDOT Local Programs Director approval. Last year BRAC awarded 16 bridge replacement grants. The bridge replacement BRAC funds ranged from (\$1Million to \$12Million), the average award was \$3.5 Million. More information on BRAC funding is available at: <http://www.wsdot.wa.gov/LocalPrograms/Bridge/Funding.htm>

The Granite Falls Bridge #102 Replacement project connects with and complements, but has independent utility from, an earlier project on the same freight corridor, the Granite Falls Alternate Route (GFAR, later named Quarry Road). This project was completed in 2011 and was administratively reviewed and accepted by WSDOT in 2012. The Granite Falls Alternate Route Project had substantial federal funding, approximately \$8 Million. Federal fund sources included ARRA, Demonstration, Discretionary and STP. In addition, the project had substantial state

support through the Freight Mobility Strategic Investment Board and private funding of over \$1 Million from quarry operators dependent on the bridge for product delivery.

Expected Project Users

Average Daily Traffic (ADT)

Documented traffic counts have shown that the bridge has varying degrees of use depending on the time, day, and month of year. On average there are 4,319 trips per day. Peak daily trip counts reach 5,695. In 2014, there was an average of 1,258 Heavy Truck trips per day on the bridge.

Granite Falls School District Students

The Granite Falls School District provides transportation for students on the Mountain Loop Highway year round. There are 203 students picked up in the morning and 236 in the afternoon with a total of 36 trips across the bridge.

Local-area Residents

According to the 2010 US Census Data, there are approximately 3,364 residents in Granite Falls and 1,347 residents in the Town of Darrington. Residents, truck drivers and tourists alike perceive a safety experience due to the narrow bridge.

Mining and Timber Industries

There are 571 workers in the Granite Falls and Darrington areas that commute in from the outside. The 3,695 workers living in the areas commute elsewhere for work. Only 164 live and work in the area. Local residents are not those who are employed in the mining, forestry and wood products manufacturing industries. According to the Washington State Employment Security Office, the quarries utilizing the crossing at Granite Falls employ over 250 employees with average wages of over \$57,000/year; their annual payroll is over \$14.5 Million

Emergency Services

In 2014, the Snohomish County Sheriff's Office responded to 1,294 service calls from Granite Falls to the Town of Darrington. A recent 29 month study showed that Snohomish County's Search and Rescue team used the Granite Falls Bridge #102 for 121 missions to rescue hundreds who were lost or injured. Seven bodies were also recovered. These missions accounted for 31% of their total. Uniformed deputies and volunteers made 932 vehicle trips during the missions and without this critical access point on the Mountain Loop Highway, more lives could have been lost due to the long detour. A total of 9,680 hours were spent by Sheriff's Office personnel and members of Snohomish County Volunteer Search & Rescue responding to missions on the Mountain Loop Highway.

Granite Falls Fire District 17 has five grids east of Bridge #102 which constitutes five square miles of their 38.5 square mile district. The response area continues east on the Mountain Loop Highway to the bottom of Sand Hill; however, they also provide coverage in the outlying area in conjunction with Robe Valley Fire District 23. They average 165 fire and aid calls per year.

Tourists

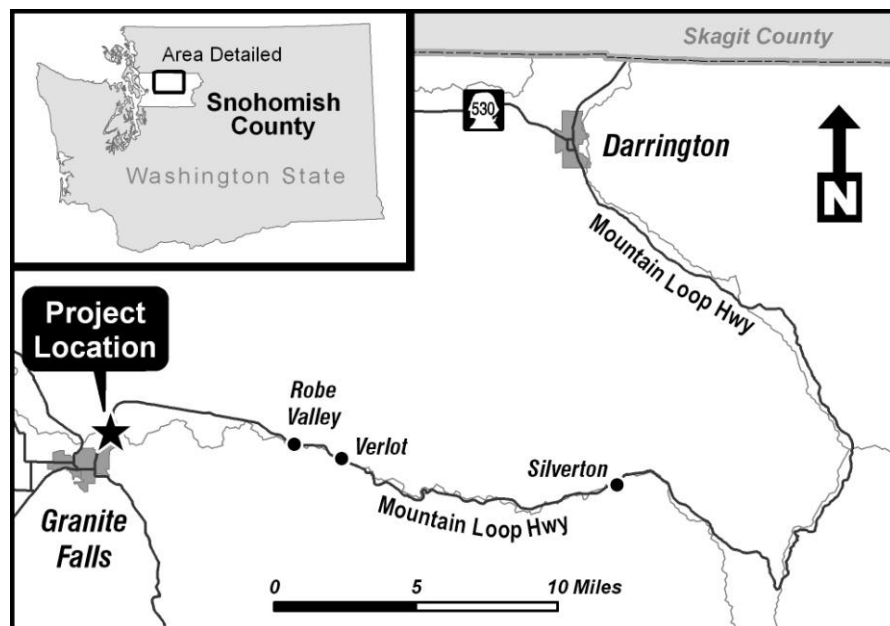
Mountain Loop Highway is one of the main routes to access the Mt. Baker-Snoqualmie National Forest. This National Forest is one of the most visited forests in the country. There were approximately 1,899,100 national forest visits on Mt. Baker - Snoqualmie National Forest during fiscal year 2005. There were about 2,057,400 site visits. Included in the site visit estimate are 291,400 Wilderness site visits.

B. PROJECT LOCATION

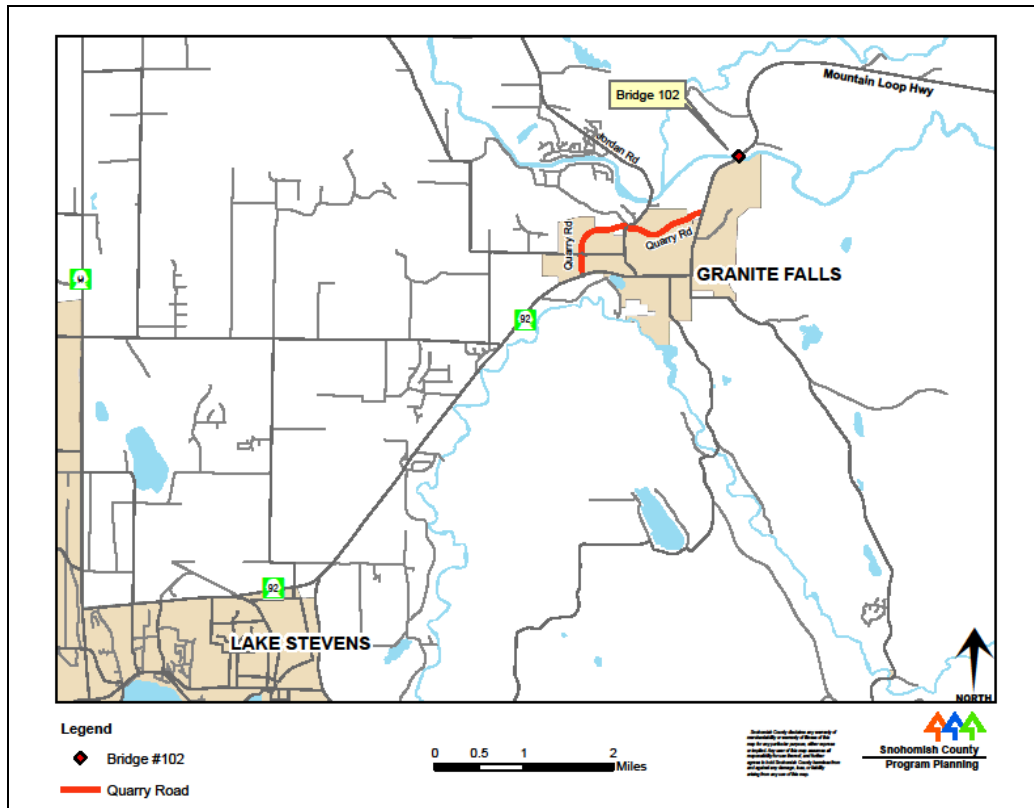
Granite Falls Bridge #102 is located approximately 1.5 miles east of the City of Granite Falls, Washington, at the coordinates of 48°06'12" N, 121°57'12" W, in the County of Snohomish, and carries Mountain Loop Highway traffic over the South Fork Stillaguamish River.

The project site straddles the Urban/Rural boundaries (Census 2010). The bridge is classified as Urban but the Mountain Loop Highway is classified as Rural just west of the bridge. This bridge provides direct access to the Mountain Loop Scenic Byway and the Mount Baker-Snoqualmie National Forest. This bridge is a key through-route for transport of construction resources including timber, sand, gravel and aggregate resources critical to the Puget Sound Region via a T-2 freight route on the Granite Falls Alternate Route (GFAR).

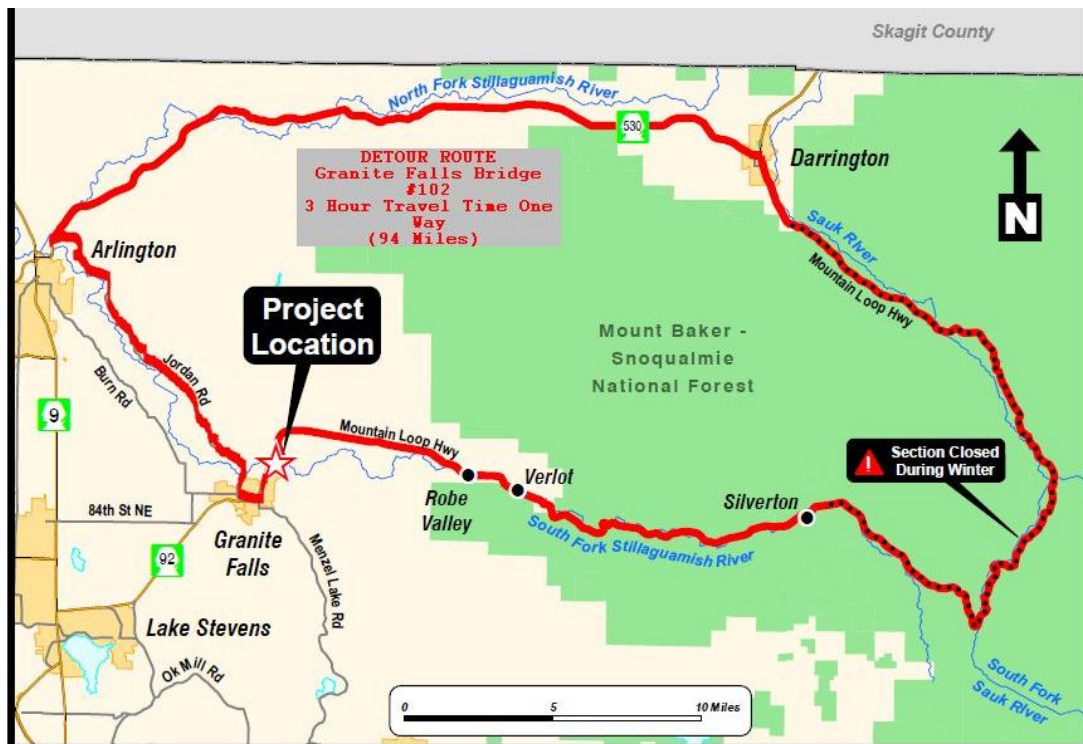
This highway is used for recreational opportunities and tourism, and for residents in the rural townships of Verlot, Robe Valley, and Silverton. If the current 81 year old bridge was to fail, the effects would be devastating to residents and to the local economy as the detour route would be 94 miles long and take three hours one way. In the winter months, the portion of the highway which leads to the Town of Darrington and Oso is closed and part of it is built to minimal forest service standards. This same highway was used for local residents as a secondary detour after the SR530 Landslide (Presidential Disaster Declaration) to access the Town of Darrington.



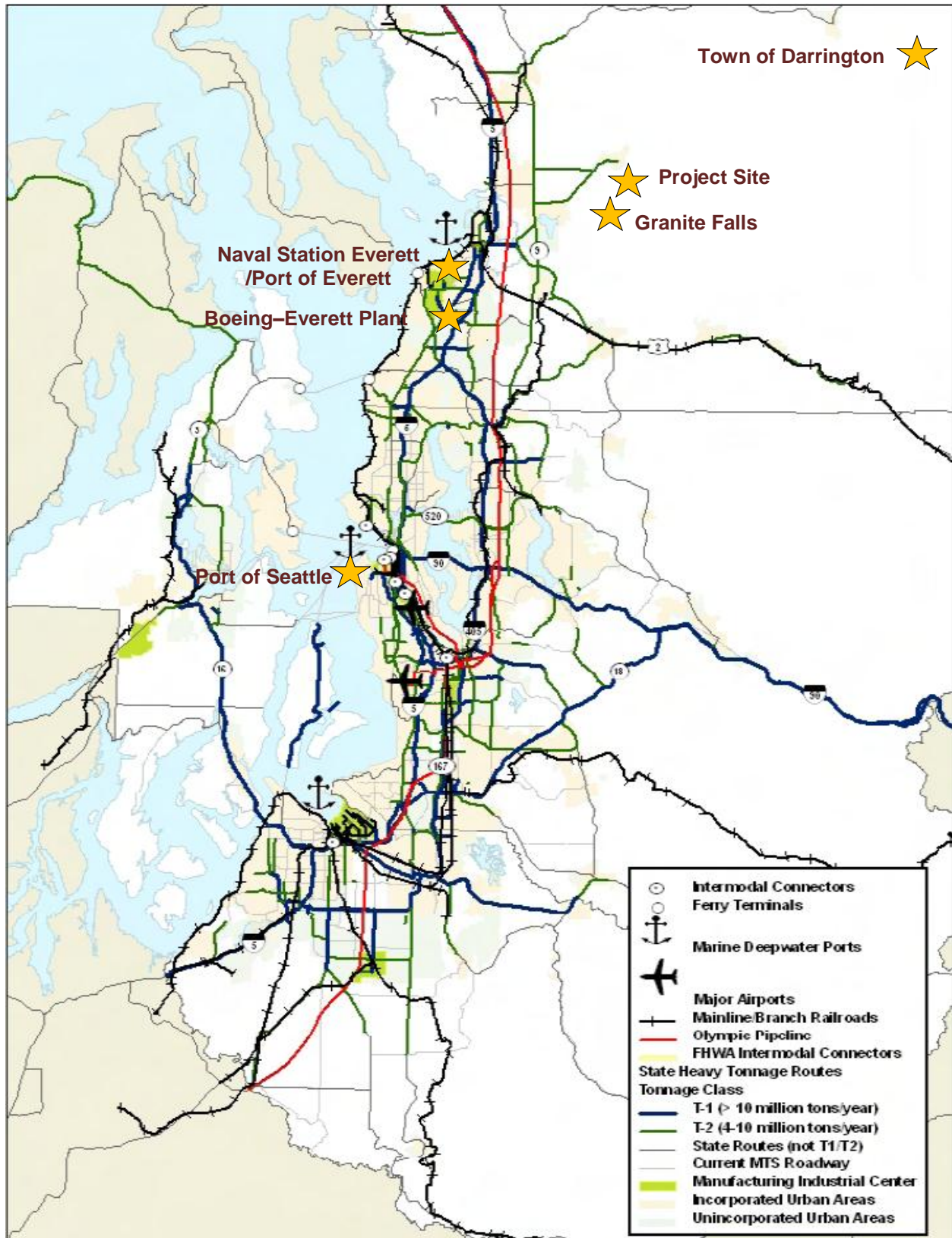
Map 1. Granite Falls Bridge #102 Replacement Project Vicinity Map



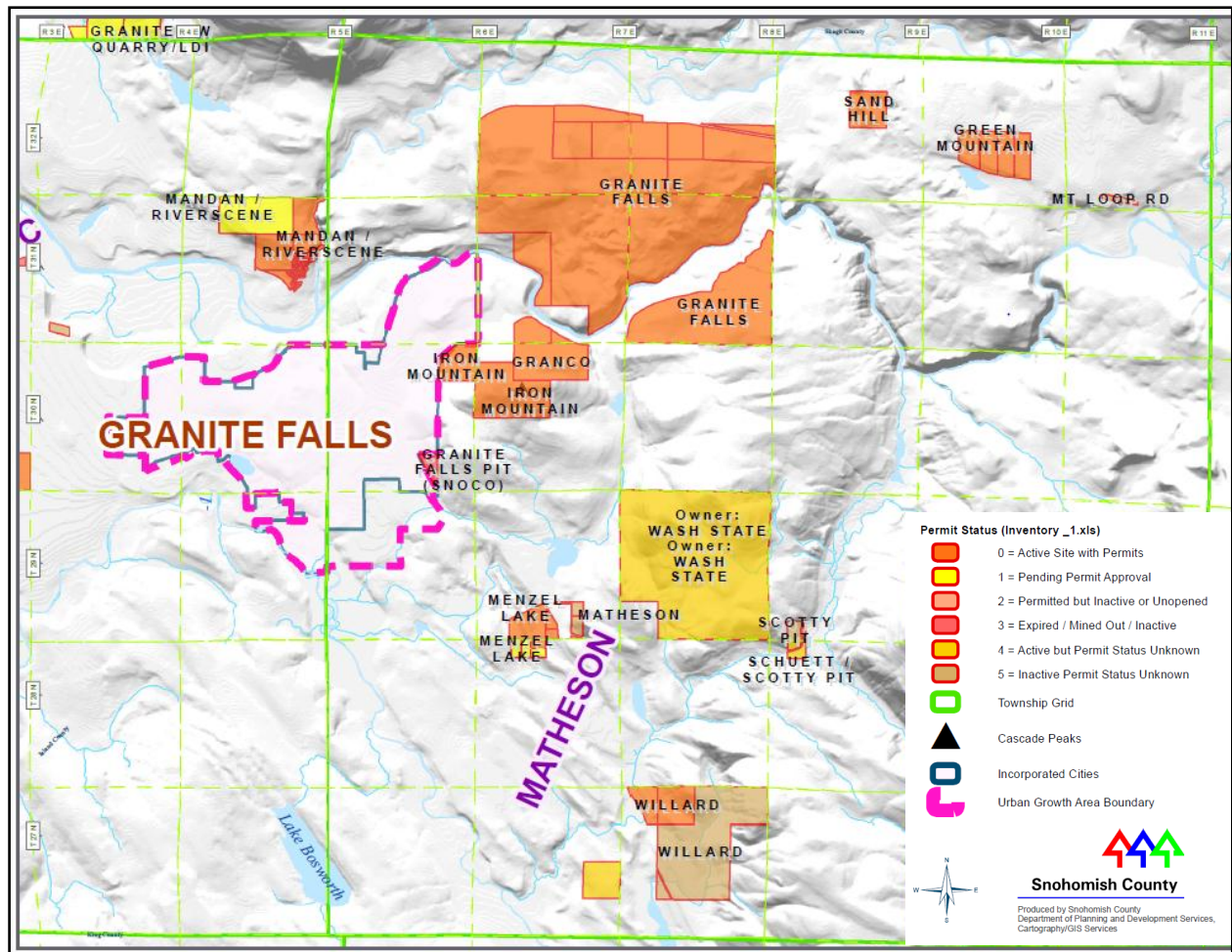
Map 2. Granite Falls Alternate Route (GFAR) – T2 Freight Route – Granite Falls Bridge to GFAR to Puget Sound



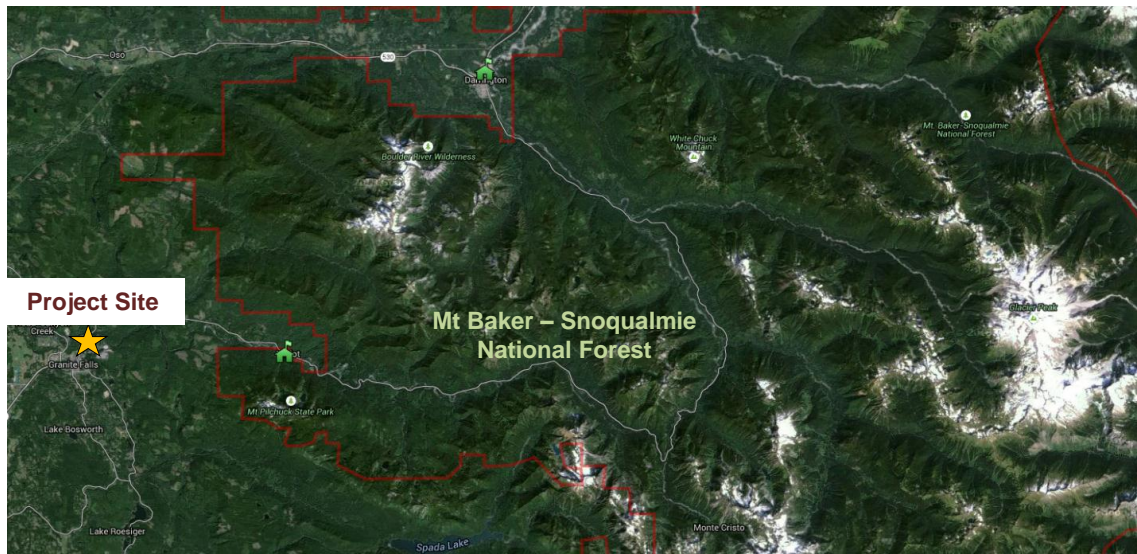
Map 3. Granite Falls Bridge #102 Replacement Project Detour Route



Map 4. Granite Falls Bridge #102 Replacement Project
Metropolitan Transportation System Freight Mobility



Map 5. Granite Falls Bridge #102 Replacement Project. Quarry/Mines in the Project Area



Map 6. Granite Falls Bridge #102 Replacement Project (National Forest Tourist Activities)

C. PROJECT PARTIES

Snohomish County

Snohomish County's Public Works Department employs approximately 600 employees and is responsible for the development and maintenance of the County's transportation system, disposal of solid waste generated within all of Snohomish County; and control and management of surface water quantity and quality. The Roads Division is responsible for 1,675 miles of road and 200 bridges.

Recent Awards:

- 2015 Build Washington Construction Excellence
- 2015 American Public Works Association (National and Washington State Level)
- 2013 County Engineer of the Year

Snohomish County will work directly with the Washington State Department of Transportation (WSDOT) through their Local Programs Office for administration of TIGER funds. Snohomish County staff is experienced at working with Stimulus funds including ARRA and TIGER.

Washington State

Washington State Department of Transportation (WDOT)
Northwest Region HQ Office
Local Programs Office
15700 Dayton Avenue North
Shoreline, WA 98133

Metropolitan Planning Organization

Puget Sound Regional Office (PSRC)
1011 Western Avenue, Suite 500
Seattle, WA 98104-1035
(206) 464-7090

Additional Stakeholders

Frontier Communications
National Forest Service
Puget Sound Regional Council
Snohomish County Public Utility District
Washington State Department of Fish and Wildlife
Washington State Department of Natural Resources
Washington State Department of Transportation
Xfinity Broadband

D. GRANT FUNDS AND SOURCES / USES OF PROJECT FUNDS

Request

The county is requesting \$16 Million in TIGER VII funds, 80% of the total construction budget, including Construction Engineering (CE). The 20% match is budgeted in the County's Transportation Improvement Program and will be available for project implementation upon award of TIGER VII funding.

Prior Investment

The County has expended \$700,000 in local funds coordinating the interdisciplinary project development, including the 30% design, the current status of implementation. In addition, the County has budgeted \$800,000 to complete all preconstruction activities through advertising and award. These funds are not being applied towards the match requirement.

Granite Falls Alternate Route

The Granite Falls Bridge #102 Replacement project connects with and complements, but has independent utility from, an earlier project on the same freight corridor, the Granite Falls Alternate Route. This project was completed in 2011 and administratively reviewed and accepted by WSDOT in 2012. The Granite Falls Alternate Route Project had substantial federal funding, approximately \$8 Million. Federal fund sources included ARRA, Demonstration, Discretionary and STP. In addition, the project had substantial state support through the Freight Mobility Strategic Investment Board and private funding of over \$1 Million from quarry operators dependent on the bridge for product delivery. The project is now called Quarry Road and routes the 1200 +/-day heavy trucks around rather than through the community of Granite Falls. The Granite Falls Bridge #102 Replacement Project will be aligned to intersect with Quarry Road such that truck traffic in both directions can safely maintain optimum operating speeds to and from the quarries while allowing private and other small vehicles to travel as well.

Historic Investment

Investment by Snohomish County and multiple funding partners in the Granite Falls area has been extensive. Over \$31 million dollars has been spent in the past two decades on the transportation infrastructure serving Granite Falls from Granite Falls Bridge #102 to SR 92. These investments include over \$25.53 Million on the Granite Falls Alternate Route (Quarry Road). A roundabout was also constructed along Quarry Road where Jordan Road and Engebretson Road join it for an additional \$2.38 Million. Approximately \$2.57 million was invested on rehabilitation of the existing Bridge #102 to help extend the useful life until funding could be identified and requested for replacement of that bridge. As noted earlier, approximately \$700,000 has been invested on designing a new bridge to carry the enormous amount of traffic that crosses this bridge daily to supply the raw quarry materials needed for the construction industry, provide emergency services and to provide safe passage for the many recreational activities offered along the Mountain Loop Highway.

Action: → Amendment¶

County: → Snohomish → → → → List-of-09-05-Amendment-Projects-Approved-4/17/09¶

Jurisdiction: → Snohomish County¶

Project Number: → GF-1A → → → Title: Granite Falls Alternate Route (GFAR)¶

| Phase ^a | Programmed Year ^a | Obligation Date ^a | Funding Source ^a | Federal Fund ^a | State/Local Fund ^a | Other Funds ^a | Phase Total ^a |
|---------------------------|------------------------------|------------------------------|---------------------------------|---------------------------|-------------------------------|--------------------------|--------------------------|
| ROW ^a | 2008 ^a | 1/31/2007 ^a | STP(L) ^a | \$655,663 ^a | \$0 ^a | \$0 ^a | \$655,663 ^a |
| ROW ^a | 2008 ^a | 1/31/2008 ^a | STP(L) ^a | \$3,337 ^a | \$0 ^a | \$0 ^a | \$3,337 ^a |
| Construction ^a | 2009 ^a | 1/31/2008 ^a | STP(L) ^a | \$792,073 ^a | \$0 ^a | \$0 ^a | \$792,073 ^a |
| Construction ^a | 2009 ^a | 12/30/2008 ^a | Demonstration ^a | \$1,029,000 ^a | \$0 ^a | \$0 ^a | \$1,029,000 ^a |
| Construction ^a | 2009 ^a | 3/1/2009 ^a | ARRA ^a | \$3,500,000 ^a | \$0 ^a | \$0 ^a | \$3,500,000 ^a |
| Construction ^a | 2009 ^a | 4/1/2009 ^a | FHWA Discretionary ^a | \$2,018,750 ^a | \$0 ^a | \$0 ^a | \$2,018,750 ^a |

WSDOT PIN: Federal Aid Number: Totals: \$7,998,823 \$0 \$0 \$7,998,823

Functional Class: Minor Arterial OVER 5,000 → → → Improvement Type: New Facility Roadway¶

Location: Proposed Route runs north of the downtown area and → → → From: SR-92 at west edge of UGB TO: Mt. Loop Highway at North Edge¶
→ Around the north and west edges of the UGB¶

MTP Statue: Approved → → → MTP Reference(s): 1950¶

Description: → → → → → Regionally Significant: Yes → Environmental Status: EA¶

For many years, increasing traffic volumes and safety issues in the downtown core of Granite Falls, WA has prompted the City of Granite Falls and Snohomish County to propose an alternate route around the City for freight movement. Approximately 2000 heavy trucks transport quarry products through the downtown area each day severely impacting residents, businesses and schools by creating congestion and extreme noise and air pollution. The Proposed Major Collector Granite Falls Alternate Route (GFAR) will provide improved/efficient access for freight by creating a designated freight corridor which by-passes downtown Granite Falls. Federal Funding will be utilized to pay for a portion of the Preliminary Engineering/Environmental, ROW and Construction phases. This project is receiving 2009 ARRA funds. The total project cost is \$32,600,000.¶

Exhibit of State Transportation Improvement Program (STIP)

E. SELECTION CRITERIA

Problem Statement – the Baseline

The project proposes to replace an 81 year old structure utilizing a construction type, hinged steel truss, which is no longer approved by the American Society of Civil Engineers. Due to its construction type, it is not feasible or reasonable to renovate the structure to bring it up to current standards. It has been designated by the Washington State Department of Transportation as being both structurally deficient and functionally obsolete; it has an overall Sufficiency Rating below 50 on a 100 point scale and is determined to be fracture critical. It presents serious safety problems, most importantly its width: a large truck and another large vehicle cannot pass each other even at reduced speed limits. In the event of a side swipe or other deflective incident the bridge railings are neither high nor strong enough to keep the lighter vehicle from braking through and into the gorge 90 feet below. Along with an average of more than 2,000 passenger vehicles per day, buses serving the Granite Falls School District make eighteen round trips (36 individual crossings) per day during the school year.

The lack of a modern structure is also a hindrance to the regional and, by extension, national economy. The primary heavy truck traffic, as much as 1,900 trucks per day, is serving the several quarries on the far side of the bridge. These trucks haul rock, aggregate and sand to the growing Puget Sound Region and are significantly involved in the development of major facilities such as the Boeing 777x Wing Plant and Naval Station Everett. These products are also essential to the building industry as they comprise 80-90% of the concrete material for buildings and roadways. These quarries are conveniently located with respect to SR 9, a part of the National Highway System with significant military and economic centers. The quarries served by this bridge are the closest to the rapidly growing manufacturing and international trade oriented Seattle -Everett Metropolitan area and well within the fifty mile radius the National Aggregates Association identifies as the economically viable distance for high volume, low value per ton products. The proposed project will reliably connect goods to SR 9 via SR 92 for which a new interchange will connect them with I-5. In the event of a failure of the current structure, the “alternative” is a 94 mile detour (188 miles round trip). This alternative route results in lost time, lost value, higher rates of diesel-related emissions and increased safety conflicts on the detour route. It is not economically viable for more than a few weeks. (See Section B for maps).

Primary Selection Criteria

E.1. State of Good Repair

The project is consistent with relevant plans to maintain transportation facilities or systems in a state of good repair and address current and projected vulnerabilities. As noted earlier in this application the project constitutes the final link between major resource areas to the north for strategic building materials and the state and interstate systems through which these materials are delivered. It aligns the structure with the Granite Falls Alternate Route project which connects with these systems to maintain reliability and travel time. The current structure cannot be retrofitted to correct width, stress or seismic criteria due to its structural type and age. It is important to note that this project is the final connection to the regional freight system; the connection at Granite Falls is considered a Regionally Significant Project in the Metropolitan Transportation System and the Regional Freight Strategy. The critical nature of this link and

regional policy support can be found in *Transportation 2040*, Appendices D&J, which is the regional transportation plan for the Puget Sound Region, prepared and adopted by the Puget Sound Regional Council, the Metropolitan Planning Organization.

With award of the TIGER VII grant, the project will be fully capitalized and construction can be initiated per the schedule in Section G3 of this application. The new bridge will be incorporated into Snohomish County's Asset Management system to be inspected and maintained per standard engineering practice and as prescribed by federal regulations. Stable funding for the capitalization of this project and its ongoing maintenance are discussed in more detail in Section G2 of this application.

E.2 Economic Competitiveness

Construction of the bridge identified in this application will contribute to the economic competitiveness of the United States over the medium- to long-term and ensure preservation of good paying jobs. It is helpful to understand the context of this bridge and its major economic characteristics in a regional framework. The Puget Sound Regional Council has identified that construction aggregates, the primary output of this area, constitute the largest single product moved by truck in the Central Puget Sound Region. The most recent data available indicate that in 2010 volume of this commodity totaled 35 Million tons. By 2035 this tonnage is projected to increase to approximately 42 million tons. Please see Figure 4 of Appendix J, *Transportation 2040*. The quarries served by this bridge account for four million tons of that trade and transport; this is expected to increase as permits for aggregate mining become more difficult and expensive to obtain. According to the Washington State Employment Security Office, the quarries utilizing the crossing at Granite Falls employ over 250 employees with average wages of over \$57,000/year; their annual payroll is over \$14.5 Million. Due to the nature of what they produce and the cost of transport, these quarries cannot economically ship their product more than 50-75 miles. There is no viable alternative, over the long or even medium term, for shipping aggregate products to the Puget Sound Region; as noted above, the only truck accessible detour requires a 188 mile round trip which is not sustainable for more than approximately four weeks before it is more effective for the quarries to temporarily shut down. The crossing at Granite Falls is truly an economic lifeline for the economic success of the Region. PSRC information visit: <http://www.psrc.org/transportation/t2040>

Conversely, there are no other quarries within the 50-75 mile radius to make up the difference over the long term. Thus, the cost of aggregate products for the region can reasonably be expected to rise with the loss of the Granite Falls operations for a protracted period of time.

While heavy trucks account for approximately one-third of the traffic on average, a reliable crossing at the current location benefits general traffic as well. The importance of a reliable crossing to the Granite Falls School District has already been discussed. In addition, this is the most direct route to employment opportunities, tourism activities, vocational and academic training and social services.

E.3 Quality of Life

The project, as described in the application will create a safer and more non-motor friendly crossing at this location. This is important as some access to the Mt. Baker – Snoqualmie National Forest facilities is done on foot and by bicycle. The project will contain ADA compliant sidewalks as opposed to the existing structure and will include widened shoulders to improve safety between motorized and non-motorized users. This will improve non-motorized access to the City of Granite Falls as well. It is important to note that mass transit service for this part of Snohomish County terminates at Granite Falls and there is no plan to extend service to the dispersed population on the far side. People wishing to or having no alternative to using mass transit will have a safe opportunity to cross the bridge.

E.4 Environmental Sustainability

Snohomish County is making government operations more environmentally and economically sustainable. Through a combination of policy development, adjustments to existing programs and processes, and projects that produce results, the County is working across departments and agencies to implement change. We have a Sustainable Operations Action Plan, an Environmentally Preferable Purchasing Policy and monitor our Benchmark and Progress Reports.

Snohomish County Public Works operates in a sustainable manner that allows new solutions to be developed in environmentally and socially responsible ways, while striving to deliver services and infrastructure which citizens expect, with the best economic choice in the long run. Granite Falls Bridge #102 Replacement project will follow environmentally sustainable design and construction best practices. The proposed project implements this approach.

The proposed structure will be designed to current, rigid seismic standards. This ensures it stays open, even following a major seismic event and thus prevents the detour situation previously described. The environmental benefit to this approach is that diesel emission related air quality impacts remain at minimum levels as trucks will continue to use the most energy efficient route. Maintaining air quality is major environmental benefit. This same analysis applies to serious incidents on the bridge. Even a serious collision would only close the bridge for one day and would not inflict long term structural damage; again, this ensures availability of the most energy efficient route to market. Comparing this situation to the current structure, serious collisions would be cleared more slowly due to geometry and load bearing capacity. Structural damage is highly likely and repairs are difficult and time consuming to implement because of the structural type and multiple potential failure points. The current alignment is not environmentally friendly. It does not avoid or protect wetlands or wildlife habitat. The NEPA evaluation for the proposed project is underway. Critical habitat, including wetlands, has been mapped along with potential cultural resources; avoidance, protective and mitigation measures have been developed. These measures have been incorporated into the design and cost estimate to ensure their long term viability. The location of the project, in a national forest and over a river, requires consultation

with multiple agencies; this process has been initiated and will result in environmentally sustaining features and actions being incorporated into the design and construction.

E.5 Safety

The existing structure is, by urban standards, a low volume and, hence, a low incident facility. Thus, the safety improvements associated with this application are preventive, rather than corrective in nature. As has been noted, the current structure does not meet current design standards for either accident prevention or incident impact mitigation. The fact that there have been no serious incidents is largely attributed to the fact that users are generally familiar with the bridge. For example, the one truck at a time characteristic is self-monitored. However, regional projections assume that both industrial and personal traffic will increase steadily through 2040. Local data already demonstrates that the Granite Falls area is one of the most rapidly growing in Snohomish County. Thus, the familiarity that has helped keep the accident rate down will decrease while the opportunity for accidents increases. This trend has two major potential types of implications: on the structure and off the structure.

Comparing the existing and proposed structures, simply stated: a minor incident on the proposed structure is easily a major incident on the existing structure and vice versa. Barring a catastrophic, head on collision between two large vehicles on the proposed structure the incident could be quickly cleared at least sufficiently to resume traffic flow for personal and moderate sized vehicles; significant damage to the structure is unlikely. In the case of a side swipe incident, the most likely, the deflected vehicle would be safely captured by the shoulder buffer, higher curb and bridge railing. On the current structure, a serious deflection would easily result in the lighter vehicle being completely thrown through the railing and into the river ninety feet below.

Off the bridge, the potential impacts appear less dramatic but have serious implications nonetheless. As has been described, a serious accident on the bridge could close the bridge, at least to heavy truck traffic for one day, more if there was structural damage. A lane for personal vehicles could be cleared relatively easily. However – what is not accounted for in the data is what kind of vehicles larger than personal cars would be permissible. For example, information from the Snohomish County Sheriff's Office indicates that emergency vehicles, including Search & Rescue used the bridge over 900 times. Granite Falls Fire District 17 is also stationed on the near side of the bridge. They respond to an average of 165 incidents across the bridge annually. What is not accounted for or available in these statistics is what vehicle types comprised these trips and whether they would be able to move the appropriate equipment across the river in essential response time. The proposed project eliminates this issue.

Secondary Selection Criteria

E.6. Innovation

The project proposed in this application is innovative in its project development processes, in the fact that it builds upon, complements and completes prior Stimulus (ARRA) funded projects and will manage the project's integrity throughout its life cycle.

The project development process is based upon context sensitive design. Three technically viable construction types and locations were developed and peer reviewed by expert structural engineers in consultation with geo-technical and constructability analyses. A rigorous life-cycle analysis was applied to each alternative. Concurrently, substantial research was undertaken in the disciplines of public perception, biology, historic preservation and archaeology. The findings of this research were incorporated into the final analysis through a weighted matrix process in a workshop environment including private as well as county staff. It is important to note that the preferred alternative was not the least expensive but the option that was rated the most effective at implementing the issues identified in the decision matrix. The result; the proposed alignment, structure type and mitigation commitments incorporates non-technical context considerations.

The project is also significant in that it builds upon and completes an effort initiated in 2009 using early stimulus funding. In 2009 Snohomish County helped the community of Granite Falls design, fund and construct the Granite Falls Alternate Route project. This project is now complete; it routes heavy truck traffic around rather than through the community on a facility that is safer as well as less disruptive of the community. In fact, downtown Granite Falls is experiencing something of a renaissance as heavy trucks are no longer traversing its main thoroughfare. Substantial Congressional and State support was also made available to supplement the ARRA funds and is discussed previously in this application. The Granite Falls Bridge #102 Replacement project proposed in this application is designed and aligned to intersect with the Granite Falls Alternate Route Project to efficiently move heavy trucks efficiently around the community to intercept with SR 92 and channel them towards the Puget Sound Metro Area.

Finally, when the new structure is constructed, it will be added to the Snohomish County Public Works Department Asset Management System which is planned for implementation in the Summer of 2015. This system will employ GIS technology to map and track the condition of critical structures. It will also integrate rigorous maintenance standards and records with historical and environmental information on an asset specific rather than program general basis.

E.7 Partnership

Letters of Support

1. United States Congresswoman Susan DelBene
2. United States Senator Maria Cantwell
3. United States Senator Patty Murray
4. Washington State Department of Transportation (WSDOT)
5. Puget Sound Regional Council (PSRC)
6. American Whitewater
7. City of Arlington
8. Darrington Area Resources Advocates (DARA)
9. Darrington Strong, Inc.
10. Economic Alliance of Snohomish County
11. Forterra
12. Granite Falls Fire District #17
13. Snohomish County Sheriff's Office
14. Snohomish County Tourism Board
15. Washington State Department of Fish and Wildlife

Attached and Available on our Application Website at (www.snohomishcountywa.gov/3028)

F. RESULTS OF BENEFIT COST ANALYSIS (BCA)

Executive Summary

Analyzing benefits and costs for the Granite Falls Bridge #102 Replacement presents unique challenges as the project is preventive rather than corrective in nature. The BCA relies on consultation with subject matter experts primarily in the fields of structural engineering and environmental analysis to project what is reasonably likely to happen to identify changes from the project baseline. The value of the benefits and costs of these changes is based on basic literature research produced by credible agencies such as the US Department of Labor, US Environmental Protection Agency, Washington State Department of Employment Security and the Washington State Department of Transportation among others. Every effort has been made to keep the analysis as simple, straightforward and transparent as possible. The assumption parameters were developed in consultation with the Freight Policy Institute at Washington State University. The planning horizon was established as 2040; this is consistent with the horizon used by the Metropolitan Planning Organization in its transportation planning document Transportation 2040. This is appropriate because the project is a regionally significant capacity improvement within the context of that document and the benefits will accrue to that region. It is important to establish that benefits that accrue to the Puget Sound Region accrue to the nation as well. The region is one of the largest and most rapidly growing in the United States. It is a major international gateway and home to numerous military installations as well the regional headquarters of many federal agencies including but not limited to the Federal Transit Administration, Federal Aviation Administration, US Department of Commerce and the US Department of Labor. It is also the headquarters of the Seattle District of the US Army Corps of Engineers.

The Benefit/Cost Ratio for this project is estimated to be 1.21. Detailed assumptions are included on the spreadsheet.

Attached and Available on our Application Website (www.snohomishcountywa.gov/3028)

G. DEMONSTRATED PROJECT READINESS

G.1 Technical Feasibility

Snohomish County has assessed the technical feasibility of the Granite Falls Bridge #102 Replacement project by conducting early planning design activities. These activities include an Alternative Creation Workshop and the completion of a Type, Size, and Location Study Report (TS&L Report). For Granite Falls Bridge #102 TS&L Report, see our Application Website (www.snohomishcountywa.gov/3028)

The TS&L Report includes investigation and documentation on:

- Existing Conditions
- Code Design Requirements
- Roadway Geometrics and Alignment
- Right-of-Way and Easements
- Surface Water Management
- Environmental
- Utilities
- Geotechnical Design Recommendations
- Alternative Constructability Analysis
- Alternative Cost Comparison

The following information demonstrates the technical feasibility of the Granite Falls Bridge #102 Replacement Project:

| Project Item Completed | Expertise Level Applicable to Item |
|---|--|
| <p>Alternative Creation Workshop</p> <p>This was a two-day intensive workshop that developed and evaluated feasible alternatives for the replacement bridge and road alignment.</p> <p>Evaluation/selection criteria were established to eliminate the least desirable alternatives and select three alternatives for further evaluation. Workshop participants were chosen for their experience and expertise in key subjects. These subjects include geotechnical and foundation engineering, roadway design, bridge design, bridge construction, previous project background and knowledge, and environmental impact understanding.</p> | <p>Participants:</p> <p>Snohomish County: Projects Planning Director, County Bridge Engineer, Bridge Supervisor, Bridge Project Manager, Geotechnical Supervisor, Environmental Sr. Planner.</p> <p>AECOM: Sr. Structural Designer/Sr. Structural Project Manager, Sr. Structural Design Engineers with differing experience backgrounds to provide insight into numerous and widely-varied bridge alternatives, Sr. Civil Designer/Sr. Project Manager.</p> <p>Shannon & Wilson: Geotechnical Firm manager/Sr. Geotechnical Engineer, Sr. Geotechnical Engineer with rock expertise, Sr. Geotechnical Engineer with broad-range project background, including Project Management.</p> <p>William Ott and Associates: Expert in Construction Engineering & Construction Management.</p> <p>Approximately 520 years of experience overall.</p> |

| Project Item Completed | Expertise Level Applicable to Item |
|---|--|
| <p>Granite Falls Bridge #102 Type, Size, and Location Study</p> <p>This Study built upon the Alternative Creation Workshop by researching design criteria and analyzing applicability, <i>constructability</i>, and comparative construction and life cycle costs of three leading alternatives identified in the Workshop. In addition, rock mapping and rock coring was done to evaluate subsurface rock integrity and its capacity to support various proposed bridge foundation types.</p> | <p>Participants:</p> <p>AECOM: Sr. Structural Designer/Sr. Structural Project Manager, Sr. Structural Design Engineers with differing experience backgrounds to provide insight into numerous and widely-varied bridge alternatives, Sr. Civil Designer/Sr. Project Manager.</p> <p>Shannon & Wilson: Geotechnical Firm manager/Sr. Geotechnical Engineer, Sr. Geotechnical Engineer with rock expertise, Sr. Geotechnical Engineer with broad-range project background, including Project Management.</p> <p>William Ott and Associates: Expert in Construction Engineering & Construction Management.</p> |

| Project Item Completed | Expertise Level Applicable to Item |
|---|--|
| <p>30% Preliminary Plans - A separate element of the Granite Falls Bridge #102 Type, Size, and Location Study</p> <p>30% Plans were developed for the proposed bridge replacement project in order to initiate the design phase of the alternative that was chosen in the Type, Size, and Location Study. The 30% plans move beyond the TS&L Study by beginning the engineering design for grading, alignment, drainage, retaining walls, slope protection, site stabilization and erosion protection; the plans also continue to move the structural design forward by applying specific engineering parameters to the foundations and to the proposed structure.</p> | <p>Participants:</p> <p>AECOM: Sr. Structural Designer/Sr. Structural Project Manager, Sr. Structural Design Engineers with differing experience backgrounds to provide insight into numerous and widely-varied bridge alternatives, Sr. Civil Designer/Sr. Project Manager.</p> <p>Shannon & Wilson: Geotechnical Firm manager/Sr. Geotechnical Engineer, Sr. Geotechnical Engineer with rock expertise, Sr. Geotechnical Engineer with broad-range project background, including Project Management.</p> <p>William Ott and Associates: Expert in Construction Engineering & Construction Management.</p> |

Detailed Statement of Work

Proposed Bridge Characteristics

The design of the Granite Falls Bridge #102 Replacement is past 30% complete and advancing towards 60% completion. At this time the proposed bridge characteristics include:

The replacement bridge will be a three-span concrete girder bridge with a total length of 406 feet, consisting of a span arrangement of 113 feet – 180 feet – 113 feet. This span arrangement will require five girders, which will be a standard WSDOT girder known as a WF83PTG. The girders will be fabricated offsite and shipped to the site. The girders will require post tensioning prior to the final deck placement. The total structural depth of the bridge is about 7.5 feet. The five-girder superstructure will provide structural redundancy. The completed bridge deck will have a large 6,680-foot radius, and the girders are planned to be straight. The bridge deck overhangs will vary in length to account for the roadway curvature.

Bridge abutments (Piers 1 and 4) can be founded on shallow spread footings, bearing on bedrock. An alternative abutment could be short stub abutments found on top of MSE walls. The abutments could be either a stub type abutment with an overhanging end diaphragm, or an L-type abutment. Piers 2 and 3 will be five-foot-diameter columns founded on drilled shafts. Nine-foot-diameter drilled shafts have been assumed for the study. The nine-foot drilled shafts provide the required stiffness difference between the columns and the shafts, which will force a column hinge during a design-level seismic event. Approaches to reducing the drilled shaft diameter can be addressed in final design with the goal to reduce the drilled shaft diameter to eight feet. These interior piers are required to be skewed relative to the baseline. The skew allows the piers to better follow the natural ground contours. Even with the skew, the columns at Pier 2 are expected to be of different lengths. A reduced-moment section in the shorter column has been used to achieve the column stiffness symmetry desired for good seismic performance. The abutments will require a 30-degree skew relative to the base line in order to keep all of the Span 1 and Span 3 girder lengths equal. The left side of the south abutment will require a curtain wall to meet a proposed approach wall. A 20-foot-long wing wall will be sufficient at all corners of the bridge, except for the Pier 4 right side, where a curtain wall will be used to meet a proposed approach wall.

This bridge design will require two expansion joints and ten bridge bearings. Utilities, such as the water line, will be installed below the bridge deck, between the girders. Sleeves will be used to allow utility passage through the abutment backwall and diaphragms. During final design, the County will determine if any portion of the bridge would be painted with pigmented sealer.

Construction stages include:

1. Clear, grub, and excavate for foundation. Hand excavation of some rock will be required.
2. Install work platforms (trestles) near Piers 2 and 3.
3. Construct drilled shafts, columns, and cross beams for Piers 2 and 3.
4. Construct abutments for Piers 1 and 4.
5. Set girders for Spans 1 and 3. Girders will cantilever over the Pier 2 and 3 cross beams.
6. Place diaphragms and deck for Spans 1 and 3.

7. Using cranes stationed on the newly constructed Spans 1 and 3, drop Span 2 girders into place.
8. Apply Stage 1 post tensioning for total bridge length.
9. Place remaining diaphragms and Span 2 deck.
10. Apply Stage 2 post tensioning for total bridge length.
11. Complete superstructure sidewalks, barriers, and railings.

The long-term maintenance of this bridge type is expected to be minimal.

For 30% bridge design plans, see our Application Website (www.snohomishcountywa.gov/3028)

Existing Bridge Characteristics

Granite Falls Bridge #102 was built in 1934; the trusses and 20' wide floor system were designed for an H-15 (15-ton) Live Load plus a 30% impact factor. Today, each loaded quarry truck crossing the bridge weighs more than 50 tons (3.5 times the original design load). As the size of the loads increased over the years, the number of loads also increased dramatically. Today, approximately 1,200 heavy trucks cross the bridge each work day; on weekends, the number of vehicle crossings often increases although the average weight per load is lessened.

The existing #102 bridge is rated Structurally Deficient (SD) due to a deteriorated deck condition; it is also rated Functionally Obsolete (FO) because the 20 foot curb-to-curb deck width is considered inadequate for the bridge to be able to handle its normal traffic load of 5,692 ADT (Average Daily Trips). The bridge is also fracture critical.

Demolition of the existing bridge was estimated at \$630,000 (2012 dollars). The demolition of the existing bridge could be accomplished in the following manner:

1. Mid-Span Removal
 - a. Close Roadway
 - b. Mobilize two 150T Cranes
 - c. Lift Midspan Segment onto new bridge
 - d. Transport Midspan Segment to Adjacent Staging
 - e. Remove Concrete Deck and Disassemble Steel
2. Approach Removal
 - a. Demo Concrete Deck and Steel Girders in place
3. Pier Removal
 - a. Use Concrete Munchers and Concrete Breakers to Remove Pier

Right-of-Way Phase

Right of Way is scheduled to be completed by the end of 2015. For project schedule see our Application Website (www.snohomishcountywa.gov/3028). This process is simplified by the fact that there is only one parcel which needs to be acquired from the Washington State Department of Fish and Wildlife (WSDFW). Additionally, an easement for crossing waters from the Washington State Department of Natural Resources (WSDNR) is needed. Snohomish

County has been in continuous communication with these two agencies and no issues are anticipated.

As part of our property negotiations with WSDFW, we have included in the project plans include an access road to accommodate maintenance of the nearby fish ladder as well as a parking lot for the public to access the fish ladder via a trail.

All utility owners have been notified about the proposed project. Utilities within the project footprint include Snohomish County Public Utility District (SCPUD), Frontier Communications (telephone) and XFINITY (cable).

G.2 Financial Feasibility

Detailed Project Budget

Project Construction Phase Cost

As noted in the table below, our current detailed cost estimate has been inflated to show estimate 2017 construction costs. The total construction phase cost, rounded for purposes of the application is \$20,000,000. Our total federal TIGER grant funding request is for \$16,000,000. The remaining \$4,000,000 (20% Match) will be funded with local County Road Funds (CRF) as approved in the legislatively adopted County Six Year Transportation Improvement Program (TIP). The CRF has historically been a reliable and predictable funding source; it is based on property taxes and fluctuations have been minor.

Granite Falls Bridge #102

2015 TS&L Cost Opinion Estimate

Updated to 2017 Dollars

| Project Item | 2015 | 2017 |
|---------------------------------|--------------|--------------|
| Bridge and Roadway Construction | \$11,641,505 | \$12,446,585 |
| Environmental Mitigation | \$1,441,329 | \$1,541,006 |
| Contingency @ 12.5% | | \$1,748,449 |
| Mobilization @ 10% | | \$1,573,604 |
| Construction Engineering | | \$2,596,447 |
| Total | | \$19,906,090 |

Project Preparation (Readiness) Cost

Since completion of the Granite Falls Alternate Route project, mentioned earlier in this application, the County has expended local funds to better prepare the Granite Falls Bridge Replacement Project for rapid implementation following award of viable funding source(s). Design, environmental and right-of-way work have advanced significantly as displayed in the project schedule in Section G.3. Life-to-date costs have totaled over \$3.5 Million; environmental and design staff has estimated that \$1.5 Million will be required to complete the NEPA process and design activities to prepare the construction phase for advertising and award. The \$3.5 Million represents a sunk cost that was paid for from a variety of county funds; the remaining \$1.5 Million is budgeted in the current County TIP and is available until the project is awarded.

Maintenance Cost

Snohomish County Public Works Department policy is that maintenance and preservation are the top priorities in developing the departmental budget. Maintenance budgets are prepared on a five year rolling basis with built in factors for inflation and more extreme maintenance. The source of funds for maintenance activities is the CRF which is 65% funded through the County Road Levy. This is an automatic, non-voted levy that does not expire. It is based on property taxes and generates approximately \$56 Million annually. It is coordinated with the county's assessed valuation which, under state law, cannot exceed established percentages. It is managed such that there is a fiscal safety cushion between what can be assessed and what is actually assessed. Thus the County Road Levy is effectively insulated from economic adversity.

During project development, a peer review workshop of structural engineers from the public and private sectors reviewed the TS&L study. The team selected the option identified in this application as having the best life-cycle cost based, in major part, on the relatively low maintenance cost. The bridge will be inspected every two years as required by WSDOT.

G.3 Project Schedule

Attached and Available on our Application Website (www.snohomishcountywa.gov/3028)

Schedule Milestones

| Task | Month/Year |
|-------------------------|-------------------|
| 60% PS&E Bridge Design | November 2015 |
| 90% PS&E Bridge Design | March 2016 |
| 100% PS&E Bridge Design | September 2016 |
| Final PS&E | December 2016 |
| NEPA | December 2016 |
| Obligate TIGER Funds | February 2017 |
| Construction Bid Award | May 2017 |
| Notice to Proceed | May 2017 |
| Complete Construction | October 2018 |

G.4 Required Approvals

Environmental Permitting and Approvals

Snohomish County Public Works anticipates that all environmental review and permits required for this bridge replacement project will be obtained by December 2016. For project schedule see our Application Website (www.snohomishcountywa.gov/3028).

No major environmental impacts are anticipated by the construction of this bridge replacement. The existing bridge will remain open during construction of the proposed bridge. The existing bridge will be used to convey traffic during construction which eliminates the need for a temporary bridge. The proposed alignment is adjacent and parallel to the existing bridge. A portion of the proposed alignment has been previously disturbed by the existing road shoulder and a parking lot.

Due to its longer length and height above the river, the replacement bridge will require minimal clearing and grading. The proposed bridge is 90 feet above the South Fork Stillaguamish River and will not require any in-water work. The area immediately adjacent to the bridge is undeveloped. There are no structures that would be impacted.



Snohomish County Public Works includes an in-house Environmental Services team of biologists and environmental planners with extensive expertise in all phases of environmental permitting and critical area mitigation design and implementation. The department also has access to on-call consultants to assist with permitting and mitigation design if needed. Based on previous experience with similar bridge replacements in the County, permitting for this bridge project is expected to be completed in approximately twelve to fourteen months.

Previously Completed Environmental Review

State Environmental Policy Act (SEPA)

A SEPA Environmental Checklist and the Determination of Non-significance (DNS) were issued April 11, 2014 based on the Granite Fall Bridge #102 Type, Size and Location Report Alternative Three. Public notification of the SEPA Checklist was mailed to all adjacent landowners, interested parties and posted on the County's website. A newsletter was issued August 2013 to update the public on the proposed bridge replacement.

Cultural Resource Review

A *Cultural Resource Inventory of the Granite Falls Bridge #102* was completed in December 2005 prior to a proposed rehabilitation of the bridge. This report was prepared by Astrida R. Blukis Onat, PhD and Philippe D. LeTourneau, PhD, BOAS, Inc., project report #200306.05. This report concluded that *“Although the project vicinity has potential for cultural resources, it is unlikely that any archaeological resources would be found during construction of the new bridge, as construction activities are limited to the roadway surface, bridge structure, and areas previously cut into bedrock”*.

Granite Falls Bridge #102 was recorded as an historic property in 1980. At the time, it was determined not eligible for the National Registry of Historic Places. Dr. Onat recommended that the bridge be re-evaluated by a qualified professional, according to current Historic American Engineering Record (HAER) standards. In November 2008 a HAER report was completed by SHKS Architects for Bridge #102. This document was submitted to the Washington State Department of Archaeology and Historic Preservation (DAHP Log No. 080405-06-FHWA).



The authors of the HAER report concluded that because of its age, type, rarity, and its association with the development of the region, *“it is our opinion that the Granite Falls Bridge meets National Register Evaluation Criteria C and D and is thus eligible for placement on the National Register of Historic Places”*. A treatment plan would be developed by Snohomish County to mitigate adverse effects of removing the bridge if further review determines that additional efforts are necessary.

Potential Permits Required

The bridge replacement will potentially require the Federal, State and Local permits listed below.

Federal Permits and Approvals:

National Environmental Policy Act (NEPA)

- A Documented Categorical Exclusion (DCE) Checklist (formerly named ECS) would be submitted for approval by Washington State Department of Transportation (WSDOT) and Federal Highway Administration (FHWA). The County assumes this project is a Documented Categorical Exclusion (DOC CE). The duration of this process is typically twelve months long.

Section 106 National Historic Preservation Act/Washington State Archaeological Laws

- A cultural review and a Historic American Engineering Record (HAER) report were completed in 2005. These studies concluded that the bridge meets the criteria to be eligible for the National Register of Historic Places. Further study may be needed to determine if additional mitigation would be required for removal of the bridge structure.
- Consultation with the Department of Archaeology and Historic Preservation would begin when funding becomes available.

Section 4F Evaluation

- A 4F Evaluation will be required for this project. The bridge has been determined eligible for listing on the National Registry of Historic Places.
- The proposed bridge alignment will impact a small informal parking lot and portion of a trail which accesses a fish ladder maintained by the Washington Department of Fish and Wildlife (WDFW). The fish ladder is approximately 360 feet downstream of the bridge on the South Fork Stillaguamish River. The parking lot and a portion of the trail will be replaced as part of the new bridge construction. There are several alternative alignments available to replace and improve this public access. The County has coordinated with the WDFW during the preliminary design phase and is in the process of acquiring right-of-way from WDFW for the proposed bridge alignment. The final design of the parking lot and trail access will be determined in consultation with WDFW.

Corps of Engineers Section 404 Permit

- There are several small wetlands adjacent to the highway in the vicinity of the bridge. These may be impacted by the realignment and will require a Corps permit if impacted. Mitigation for these impacts will occur on-site or within the watershed. The county currently has a Water Resources Development Act (WRDA) agreement with the Corp of Engineers to expedite permits.

Endangered Species Act

- A Section 7 (Endangered Species Act) consultation will be required. A Biological Assessment will be prepared.

State Permits and Approvals:

Hydraulic Project Approval (HPA)

- A Hydraulic Project Approval will be required for the proposed bridge. The proposed bridge is 90 feet above the South Fork Stillaguamish River.



Local Permits and Approvals:

State Environmental Policy Act (SEPA):

- A SEPA Checklist and Determination of Non-significance (DNS) were issued in April 2014 (see Section G3 for Schedule). Public outreach is planned to inform the community of the proposed project.

Shoreline Substantial Development Permit

- The bridge crosses the South Fork Stillaguamish River and will require a Shoreline Substantial Development Permit. However, because the proposed bridge is 90 feet above the ordinary high water little or no impacts to the river are expected. Stormwater drainage facilities will be integrated into the design to minimize impacts to the river. There will be no in-water construction.

Snohomish County Critical Area Regulations

- The proposed bridge will comply with all Snohomish County Critical Area Regulations. Mitigation will be required for the loss of trees and other vegetation within the buffer of the river and potential impacts to the wetlands and small streams draining into the river. Mitigation for these impacts will occur on site or within the watershed.

Land Disturbing Activity Permit

- A Land Disturbing Activity Permit (Grading permit) will be issued in house by Snohomish County Public Works.

Legislative Approvals

The Granite Falls Bridge #102 project is identified in the County's Six Year Transportation Improvement Program adopted by Council. Upon notification of TIGER Grant award, Snohomish County will submit the required documentation (TIPNEW) to the Metropolitan Planning Organization.

As documented by the supports letters in Section E.7, the project is supported by Congresswoman DelBene and Senators Cantwell and Murray.

G.5 Assessment of Project Risks and Mitigation Strategies

Snohomish County Public Works Department has assembled a project preliminary risk register. It includes external and internal factors. Risks are identified as positive (strength or opportunity) and negative (weaknesses or threat).

Project preliminary risk register

| Type of Risk | Project Risk | Risk Mitigation |
|------------------------|--|---|
| Negative (Weakness) | Construction Traffic Impacts to local roads | Early and frequent community outreach to inform local residents, business owners and tourists about project construction |
| Positive (Strength) | Underground unknowns | The pier foundations and proposed bridge abutments will be driven into bedrock. Low likelihood of presence of utilities or cultural resources. |
| Positive (Strength) | Traffic Detours | The existing bridge will remain in place and open to traffic until the new bridge is completed. |
| Negative (Threat) | Opposition to existing bridge removal (cultural/historic preservation) | Plan A: Early collaboration with the public, local historic organizations and tribes Plan B: Post-pone the existing bridge removal to another project phase. This would have no impacts to the new bridge structure. |

H. FEDERAL WAGE RATE CERTIFICATION

Attached and available on our Application Website (www.snohomishcountywa.gov/3028).

I. CHANGES FROM PRE-APPLICATION

The changes from the pre-app to this application are:

- Pre-application federal ask was \$19,838,100. The federal ask amount in this TIGER application is \$16 Million.
- Pre-application non-federal amount was \$4,959,526. This TIGER application non-federal amount is \$8,797,626.